U.S. EPA Region 8
Superfund Data Management Plan

Region 8 Ecosystems Protection and Remediation
Program Support
Data Systems Team

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List of Acronyms

ASB	Analytical Services Branch
ASR	Analytical Service Request
CD	Compact Disc
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
COC	Chain of Custody
DMP	Data Management Plan
DQO	Data Quality Objectives
DVD	Digital Versatile Disc
EDD	Electronic Data Deliverable
EPA	U.S. Environmental Protection Agency
EPR	Ecosystems Protection and Remediation
ERT	Environmental Response Team
ESAT	Environmental Services Assistance Team
ESDS	Electronic Sample Documentation System
ESRI	Environmental Systems Research Institute, Inc.
EXES	Electronic Data Exchange and Evaluation System
FSDS	Field Sample Data Sheet
FTP	File Transfer Protocol
GIS	Geographic Information System
GPS	Geographical Positioning System
LIMS	Laboratory Information System
MDR	Minimum Data Requirements
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
OSC	On-Scene Coordinator
PDF	Portable Document Format
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QATS	Quality Assurance Technical Support
QC	Quality Control
QMP	Quality Management Plan

RAC   Remedial Action Contract
RFP   Request for Proposal
RP   Responsible Party
RPM   Remedial Project Manager
RSCC   Regional Sample Control Coordinator
SAP   Sampling and Analysis Plan
SDE   Secure Data Exchange
SDMS   SEMS Document Management System
SEMS   Superfund Enterprise Management System
SQL   Structured Query Language
SMO   Sample Management Office
SOP   Standard Operating Procedure
START   Superfund Technical Assessment and Response Team
TDF   Technical Direction Form
UFP-QAPP   Uniform Federal policy for Quality Assurance Project Plans
USEPA   United States Environmental Protection Agency
XML   Extensible Markup Language

Executive Summary

US EPA Region 8 has selected Scribe and its data sharing subscription service, Scribe.NET as the Database of Record for all Superfund and select non-NPL sites in the Region. Superfund data is accessible to regional users in a standardized format and hosted on EPA servers which ensures future use and access to EPA data. Scribe and its sharing component Scribe.NET provide an archive of analytical and field data that are easily accessed. The use of Scribe and Scribe.NET have improved overall data quality and accessibility to the Region while providing greater efficiency in data integration, increasing productivity and reducing costs. Scribe and Scribe.NET are maintained and supported by the EPA Environmental Response Team (ERT) in Edison, NJ at minimal cost to the Region.

Scribe.NET provides a method of storing and sharing Scribe projects. Using Scribe.NET, Scribe projects can be shared between Scribe desktop clients and/or enterprise Oracle/SQL database clients. Scribe projects are "Published" from the Scribe desktop client, and other desktop/enterprise users "Subscribe" to the published projects. Users can subscribe to individual or multiple projects. Regional or global subscriptions can also be created for sharing entire sets of published projects.

The Scribe.NET subscription service provides process and workflow choreography, identity and access control, and shared data. Services include a Publisher Service, a Subscriber Service and a Database Service. The Scribe.NET service monitors a queue of updated Scribe projects, determining changes between project versions, and packaging those changes for distribution. The Scribe.NET service is accessed by a subscriber and publisher layer that validates the data and user access before accessing the Scribe project data. Scribe projects are maintained by Scribe clients.

Scribe data management can be performed by using sorting, filtering, and reporting tools. Data Views and queries can be performed on compiled sampling data and the simplifying data analysis.

Data can be exported and the outputs can be easily integrated into standard spreadsheets and GIS applications.

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This technical document is intended for the Project Manager to provide their Contractors and Data Providers guidance on Region 8's data requirements and expectations.

Background

EPA Region 8 has and will continue to place emphasis on the use of data to track the outcomes of its environmental clean-up efforts and to better support its decision making processes. As such, it is imperative that a properly designed and maintained data system provide easy access to site analytic data of known quality and be able to distinguish between Screening Level data vs Definitive data. Consequently, the Ecosystems Protection and Remediation (EPR) Data Systems Team has developed a comprehensive data management plan for all Superfund Programs based on the Scribe database. The development of a Quality Management Plan (QMP), Data Quality Objectives (DQO), Quality Assurance Project Plan (QAPP), Field Sampling Plan (FSP), Sampling and Analysis Plan (SAP) and Minimum Data Requirements (MDR) for data deliverables are part of the quality control process. Additionally, QA/QC SOPs and data review processes have been developed to standardize data entry. The Data Management Plan is a "living plan", providing room for growth and enhancements in performance measures and data management.

Introduction

Region 8 has selected the Scribe database as the Database of Record for Region 8 Superfund sites and select non-NPL sites where the EPR program is collecting samples and analyzing data. This standardized database improves data quality and accessibility to the Region while reducing cost. Scribe is an EPA product and has the following advantages:

1) EPA Region 8 uses Scribe as the Database of Record.
2) Ensure future use and access to EPA data.
3) Major EPA Contractors currently use Scribe and are familiar with its use.
4) Chains of Custody (COCs) are created in Scribe.
5) Provides an easily accessible archive of analytical and field data.
6) Scribe is supported by EPA at minimal cost to the Region.
7) Scribe can import electronic data deliverable (EDD) files including analytical lab result EDD files, sampling location EDD data files, photographs and any additional documentation that is used in the decision making process.

Purpose

This document provides guidance to Site Project Managers, EPA staff, Contractors, Laboratories, Grantees, Field Personnel, States, Tribes and others who gather/collect analytical data and produce field data deliverables.

Scope

This document describes the types of analytical and field data deliverables collected in Region 8 and how the Region shall receive these deliverables in a standardized Scribe format. Data standards, and best management practices are identified. Large and complex sites frequently require a site-specific Data Management Plan. A site-specific Data Management Plan will be based on the requirements contained in the Region 8 Superfund Remedial Data Management Plan and will provide site-specific guidance for data collection and management. Examples of site-specific customization may include:

- Site-specific data elements and/or valid values.
- Site-specific data workflow.
- Site-specific Scribe.NET subscription information.
- Site-specific QA procedures and Auditor queries.

Responsibilities

The Region 8 EPR Data Team is responsible for maintaining this document and providing it to the Site Project Manager and those parties who provide Region 8 with analytical and field data or products. It is the responsibility of the Site Project Manager to ensure that those providing data deliverables to the Region adhere to the guidance, Data Quality Objectives and Minimum Data Requirements provided in this document. The Region 8 Data Team relies on other EPA staff such as Grant/Contracting Officers, RPMs, OSCs, Site Assessment Managers and Risk Assessors to ensure data are being submitted for long-term use.

Data Management Practices

Data planning should take place during the initial stages of the project. The Site Project Manager should ensure that data discussions occur and data requirements be estalished prior to development of the Sampling and Analysis Plan (SAP) and before any data collection begins. Planning in the very early stages of the project will allow data to be collected consistently and with the entire project scope in mind.

Suggested items for data collection strategy session include:

- Data streams (geospatial, sampling data, photos, documents, etc.)
- Project specific data elements and valid values
- Data collection tools
- Required data deliverables (such as site-specific viewer, maps, data summary reports, etc) including timing and frequency

Appendix J and K provide some useful tools for data Planning.

Scribe Formatted Data Files

Environmental Data Management

Scribe will be used in all Region 8 Superfund data collection activities to facilitate the management of large and small quantities of analytic and field data from different sources. Data entered in Scribe are published to Scribe.NET which serves as the Database of Record.

Product Overview

Scribe is a software tool developed by the USEPA's Environmental Response Team (ERT) to assist in managing environmental data. Scribe, a Microsoft Access Database, captures sampling, observational, and monitoring field data. Examples of Scribe field tasks include Soil Sampling, Water Sampling, Air Sampling, Toxicological Testing, and Biota Sampling. Scribe can import electronic data deliverable (EDD) files including analytical lab result EDD files, sampling location EDD data files, photographs and any additional documentation that is used in the decision making process.

Scribe

Scribe outputs include labels for collected samples, Chain of Custody forms and analytical lab result data reports. Scribe provides a flexible user interface to manage, query and view information. Scribe supports exporting electronic data for user services such as GIS tools and Excel spreadsheets. Sampling data may be further analyzed and can be incorporated into narrative.

Training, software and supporting documentation for Scribe V 3.9 can be found at www.epaosc.org/scribe.

Scribe.NET

Scribe.NET provides a method of storing and sharing Scribe projects. For example, Scribe projects can be shared between Scribe desktop clients and/or enterprise Oracle/SQL database clients. Users can subscribe to individual or multiple projects. Regional or global subscriptions can also be created for sharing entire sets of published projects. Once a Scribe project is published to Scribe.NET it becomes a database of record.

Region 8 Data Requirements

The US EPA Region 8 Quality Management Plan (QMP) contains a basic introduction of a quality system as well as the roles and responsibilities for implementing the Quality System within Region 8. The QMP describes the processes and procedures at the organizational level, management and staff responsibilities and lines of authority. The QMP also describes the other required documents for a site (QAPP, SAP, DMP, SOPs).

Data Quality Objectives

Data of sufficient quantity and quality is necessary to support defensible decision making. The most efficient way to collect data of sufficient quantity and quality is to determine the type, quality, and quantity of data and required data deliverables necessary to address the area of concern before the study begins. Data Quality Objectives (DQO) should be planned based on what data will be required for site assessment, sample collection, data management and risk assessment. DQOs are qualitative and quantitative statements derived from the data quality objectives (DQO) process, as defined by EPA QA/G-4. DQOs can be used as the basis for establishing the quality and quantity of the data needed to support decisions, and the data management activities that are associated with environmental data collection. DQOs will be developed during the initial concept stages of a project for all environmentally related measurement and data management activities and subsequently incorporated into the project-specific or site-specific QAPP. Once the Data Quality Objectives and data management requirements are known, they are detailed in the Quality Assurance Project Plan (QAPP). These objectives will specify the acceptance criteria for standard operating checks and balances used to evaluate and validate the databases based on parameters such as: precision, accuracy, representativeness, completeness, comparability, and sensitivity. DQOs will follow the EPA guidance EPA 540-R-96-055, *Guidance for using the Data Quality Objectives Process (EPA QA/G-4)*, February, 2006.

Data Management Plan

The Region 8 Superfund Data Management Plan (DMP) serves as the central guidance document for collecting data at Superfund Remedial sites in Region 8. The site-specific documents for each site shall incorporate what data will be collected and loaded into Scribe and what intervals or events will require these data to be published to Scribe.NET. Site-specific sampling and analytical requirements will be detailed in the Quality Assurance Project Plan (QAPP) and the Sampling and Analysis Plan (SAP) and shall incorporate the Minimum Data Requirements included in this Data Management Plan. Larger more complex sites may have a site-specific Data Management Plan.

Quality Assurance Project Plans
The QAPP defines the site-specific QA/QC activities and data management that will be performed to obtain the desired data quality. The QAPP is the document that details the who, what, when, where, why and how of the DQO. The QAPP is based on the DQOs that have been developed for a specific site or project. All QAPPs will follow the UFP-QAPP Manual per OSWER Directive 92720-17 dated June 7, 2005, EPA QA/R-5 *Requirements for Quality Assurance Plans* (EPA/240/B-01/003), March 2001, reissued May, 2006 and EPA QA/G5, *Guidance for Quality Assurance Project Plans* (EPA/240/R-02/009), December 2002. Each site and/or project will have a site-specific QAPP.

Sampling and Analysis Plans
 Sampling and Analysis Plans (SAP) will be developed for projects in which sampling activities will occur. The SAP is used in conjunction with the QAPP and Data Management Plan for the site or project. The SAP provides specific and usable documentation to field personnel to ensure that the field collection activity and data management expectations are met. Sampling Plans will be developed in accordance with the guidance provided in the UFP-QAPP Manual and QA/G-5S, *Guidance on choosing a sampling design for Environmental Data Collection* (EPA/240/R-02/005), December 2002.
EPAs quality program as outlined at www.epa.gov/quality.

Data Types
The following are the data types that will be managed according to specific Sampling and Analysis Plans (SAPs), Quality Assurance Project Plans (QAPPs) and other Workplans in order to ensure that data quality and accuracy are preserved.

1)   Sample identification and sample characteristics (e.g. field forms).
2)   Sample collection field observations (e.g. field logbooks).
3)   Sample processing field observations (e.g. laboratory reports, validation reports).
4)   Photographic documentation.
5)   Field-generated parameters (e.g. health and safety monitoring results, groundwater field parameters).
6)   Laboratory hardcopy and/or electronic Portable Document Format (PDF) files.
7)   Laboratory electronic data deliverables (EDDs).
8)   Project specific data elements and valid values.
9)   Required data deliverables including timing and frequency.
10) Laboratory data verification reports.

Electronic and hard-copy data are generated at each site. The exact make-up of these data will differ by site and will be detailed in each site's SAP, QAPP and site-specific Data Management Plan. The electronic data includes Scribe-acceptable laboratory EDDs and field data, imported into Scribe and published to Scribe.NET by the ESAT contractor, another EPA contractor or grantee. Additional EDD templates for Scribe are available from the EPAOSC website at www.epaosc.org/scribe , Laboratories will submit copies of hard-copy data packages and EDDs to the EPA Site Project Manager and/or their designated contractor electronically as Portable Document Format (PDF) and Scribe-ready digital files. The Site Project Manager will be responsible for ensuring that these data are loaded into Scribe, published to Scribe.NET and supporting documentation are placed in the Administrative Record in the EPA Region 8 Records Center.

The hard-copy data includes but is not limited to: field notes and logbooks, field sampling forms, chain-of-custody forms, phone logs, and hard-copy laboratory reports. This hard-copy data will be scanned

and saved as electronic PDF files. Electronic scanned versions of field-generated documents will be provided to the EPA Site Project Manager as directed and at the end of each sampling event or as specified by the SAP, QAPP and/or DMP. All analytical data, EDDs, field and laboratory notes files acquired or developed to support any data collection activity by a contractor or grantee are considered property of the EPA and are required to be submitted to EPA. The required Data Inputs are shown in the table below. These data will be managed according to the site-specific SAP, QAPP and DMP.

Data Inputs

Data Input	Data Type	Data Type Description	Collection Strategy	Processed Deliverable	Repository
Site Documents	Documents	Documents related to the site or site data	Various	Microsoft Office Formats, PDF - All with associated metadata table which is also uploaded and maintained in SDMS	SDMS R8 Records Center
Site Images	Photos	Photos related to the site or site data	iPad, iPhone, Digital Camera	jpg, tiff - All with associated metadata table which is also uploaded and maintained in SDMS	SDMS R8 Records Center
Sampling Data	Sampling, Monitoring	Sample and location data taken for a sample or monitoring data point	Scribe Data Entry Screens OR Ipad, Trimble Unit or laptop with Filemaker or ArcGIS Mobile,	EDD from collection device	Scribe, Scribe.NET
Analytical Results	Analytical	Results data for samples or monitoring data	Lab EDD	Lab EDD verified by data verifiers and imported to Scribe or csv from monitoring device imported to Scribe	Scribe, Scribe.NET
Validation Qualifiers	Analytical	Results of validation of lab data	Enter into lab EDD (typically spreadsheet or database table)	Lab EDD with validation qualifiers inserted delivered by validator and imported into Scribe	Scribe, Scribe.NET
Field Measurements	Monitoring	Results for monitoring data	Monitoring equipment software	csv from monitoring device imported to Scribe	Scribe, Scribe.NET

Other Data

It is possible that additional or non-standard field data may be required. Possible data include:

- Field observations or reconnaissance data
- Geologic Data
- Well Logs

The protocol for collecting additional or non-standard field data should follow the following hierarchy:

- The site data collection application should be modified to allow data collection. Data collection modifications should be documented in the site-specific DMP.

- Field forms should be created in a Scribe compatible format; form modifications should be documented in the site-specific DMP.

- To ensure completeness and consistency data should be documented in the site logbook and transcribed into a Scribe compatible EDD, data modifications should be documented in the site-specific DMP.

Other data that may be collected during field activities include:

- Historical data
- START historical data
- EPA collected data
- PRP collected data
- Other Agency collected data

The protocol for collecting field activity data should follow the following hierarchy:

- Data collected in the field by other agencies should follow the protocols for the data type outlined in the site's Sampling and Analysis Plan.
- An electronic template of Scribe compatible EDDs should be provided to other agencies so that they can provide their data in an electronic format that is consistent with Scribe.
- Historical data should be transcribed into Scribe compatible EDDs. Assumptions and missing data should be documented in the site-specific DMP.

Data Storage/ Scribe Database

The Scribe database and it's data sharing component, Scribe.NET is the Database of Record for sampling, analytic and locational data from all Region 8 Superfund sites. Scribe and Scribe.NET will be used as the primary data management, storage and data sharing tool for EPA analytical, locational and field data. Each contractor or grantee tasked with data management will manage the Scribe database and the Scribe.NET publishing and subscriptions with assistance from EPA ERT.

Additionally, a document repository, the SEMS Document Management System (SDMS) will also be used as the document repository to store and facilitate transmission of PDFs and paper documents. It will be the Project Managers responsibility to ensure that documents are submitted to the EPA Records Center for entry into SDMS. All samples analyzed by the EPA CLP laboratories will have their EDDs and PDF files temporarily archived in the SMO Portal for retrieval and future use. The permanent record will be archived in the Regional Records Center

Data Management Process

The following subsections document the general data management process for the types of sampling and analytical data that will be generated at Superfund sites by EPA, its contractors and grantees, states, responsible parties and/or their contracted representatives.

Field Data Management
Site specific sampling will be defined in the Sampling and Analysis Plan (SAP) for each individual site. The EPA sample information, including type, analytical methods, analytes, bottles, laboratories, field parameters and data management are identified in the UFP-QAPP, the site-specific SAP, QAPP and a site-specific Data Management Plan. Field and analytical data will be entered into Scribe as directed by TDF, reviewed for accuracy and completeness against the original field notes and published to Scribe.NET by the contractor as tasked and as directed by the Site Project Manager and in the site-specific SAP, QAPP and DMP.

Laboratory Data Management
Laboratory-generated analytical data, for all major media types may include: soil, sediment, surface water, groundwater, porewater, tissue, solid waste, air, toxicity testing results, benthic community analysis, and fish community results. Laboratories have been provided with the specifications of the EDD format required for direct loading into Scribe for all major media types. Laboratory data will be verified per the details specified in the activity-specific Analytical Service Requests (ASRs), SAPs, QAPPs, and the Contractor's Quality Management Plan (QMP). Once data from each sampling event have been reviewed for accuracy, it will be uploaded and published to Scribe.NET at a frequency outlined in the site-specific SAP, QAPP, site-specific DMP, as directed by the Site Project Manager or as tasked by TDF. Once the data is published via Scribe.NET, data will be able to be accessed through a Scribe.NET subscription. Scribe.NET subscription databases are a copy of the published databases, ensuring that the master copy is not modified. Only the database owner can modify the data. When the database owner publishes the data, subscribers may view the latest modifications to the database after updating their Scribe.NET subscription.

Minimum Data Requirements
EPA Region 8 has established a set of Minimum Data Requirements (Appendix A) for each sampling event. These data will be entered into Scribe and published to Scribe.NET as directed by the site-specific Data Management Plan, SAP and QAPP.

Scribe Data Auditor
The Scribe Data Auditor is a tool that is available in Scribe V3.8 and higher that allows the owner or user of the data to run an SQL query against a set of valid values. This SQL query will identify any exceptions in the database. Any Scribe project can be audited using any existing rules. It will be the responsibility of the contractor tasked with data management at the site to run the Data Auditor prior to publishing to Scribe.NET. The Auditor query can be found in Appendix H. Additional queries can be created. ERT Support will provide assistance as needed.

GIS Deliverables
All GIS files submitted to EPA must have spatial reference information that describes the projection, datum, and where applicable the collection methods. The EPA requests that all vector data be submitted in geographic coordinate system, decimal degree units, and NAD83 datum as is required under the EPA National Geospatial Data Policy, 2008. See Appendix F for the complete Region 8 GIS Data Deliverable Guidance.

GPS Deliverables

EPA Region 8 receives raw data from Field Crews that are download from Trimble or other GPG units. Latitude and Longitude with different coordinate systems (NAD83 or WGS84), CAD and image formatted files are projected into GIS coordinate systems. GPS data collected in the field are given to the GIS team for post processing and assimilation into the SDE. The GIS team then passes the locational information (Latitude, Longitude, comments, etc) from the sample stations to the Data Team there they are loaded in Scribe.

EPA Lead

The EPA Site Project Manager is responsible to ensure that data for all Region 8 lead sites they are assigned will be loaded into Scribe and published to Scribe.NET by the contractor tasked with data management responsibilities. These data shall be managed in accordance with the Regional Data Management Plan (DMP), Quality Assurance Project Plans (QAPPs), Sampling and Analysis Plans (SAPs), Standard Operating Procedures (SOPs) and any site-specific Data Management Plan. As each site will be different, the minimum data requirements and any additional site-specific required data will be detailed in the site-specific Sampling and Analysis Plan and/or a site-specific Data Management Plan. The Minimum Data Requirements in Appendix "A" will entered into Scribe and the data will be published to Scribe.NET.

Federal Agency Lead

Data management where another Federal Agency is the lead will be that agencies responsibility. Stage documents and data will be delivered to the EPA Site Project Manager by the lead Federal Agency and will be entered in the Administrative Record. These data, documents and the Administrative Record will be sent to the EPA Region 8 Records Center and placed in the Site File. The lead agency will be responsible for maintaining the original data for the site in accordance with that agencies policies and procedures. The site-specific procedures are detailed in the UFP-QAPP, DQOs, QAPPs, SAPs and SOPs for each site and approved by EPA. Region 8 will request the data to be in a Scribe-ready format when submitted to EPA as outlined in this Data Management Plan.

Tribal Lead

Data management for Tribal lead sites in Region 8 will be detailed in the DQOs, QAPPs, SAPs and SOPs for each site approved by EPA. Region 8 will require the data to be in a Scribe-ready format when submitted to EPA as outlined in this Data Management Plan. Currently, there is only one Tribal Lead Superfund site in Region 8. EPA Region 8 is currently managing sample collection and data for the Sheyenne River Sioux Tribe in South Dakota. Future data management will be in accordance with this Data Management Plan.

State Lead

Data management for state lead Superfund sites will be in accordance with that state's policies and procedures.

The State of Colorado has a pre-approved QAPP for Superfund sites. This document does not however address data management. The data management will be detailed for each site in the QAPP, SAP and Data Management Plan for each site individually. Currently the Summitville site has its own site-specific Data Management Plan. Data is loaded into Scribe for select sites and each project manager is

responsible for data management at their assigned sites. The contact person for Superfund in the State of Colorado is Doug Jamison at (303) 692-3404 or doug.jamison@state.co.us.

The State of Montana currently uses a variety of contractors for sample collection and data management. The State is currently working on a state-wide Data Management Plan and IT infrastructure to host these data. To obtain data for sites where the State of Montana is the Lead Agency, contact Lisa DeWitt at (406) 841-5037 or ldewitt@mt.gov.

The State of North Dakota is the lead for the Arsenic Trioxide site. Analytical data from that project is maintained electronically in an Access database. Reports, letters, etc. are maintained in paper files. Paper records are usually stored in the North Dakota Department of Health office or transferred to an off-site storage building (not an official state records storage center). The Arsenic Trioxide files are currently in the ND Department of Health office. Future Superfund projects may have different contact people, depending on which Division (Waste, Ground Water, Municipal Facilities) was designated as the lead agency. The contact person for the Arsenic Trioxide site is Carl Anderson at (701) 328-5213 or cjanders@nd.gov.

The State of South Dakota has not been the Lead Agency, nor have they collected data at any Superfund sites in South Dakota. The South Dakota Department of Environment and Natural Resources currently has a Quality Assurance Project Plan that has been approved by Region 8. The contact person for Superfund in South Dakota is Mark Lawrensen, (605) 773-5868 or Mark.Lawrensen@state.sd.us.

The State of Utah Division of Environmental Response and Remediation (DERR) manages data at State Lead Superfund sites. Data for these sites are managed site specifically. Generally, they have contractor support on these sites and data collected is typically managed by the State's contractor. Currently, Utah's Level of Effort Contractor is URS. Sample data is managed using a variety of software (e.g. MS Excel, MS Access, etc.) and the Division manages the Final Reports with data packages (paper format) produced as a result of the data collection. The contact person for Superfund in The State of Utah is Hans Millican, (801) 536-4115 or hmillican@utah.gov.

The State of Wyoming is not the lead agency for any Superfund sites in the State. Jane Francis at the Wyoming Department of Environmental Quality is the contact person for Superfund in the State of Wyoming. She can be reached at (307)777- 7092 or jane.francis@wyo.gov.

RP Lead

While the Responsible Party may be collecting and managing data at their site, EPA is the ultimate owner of these data which are used in site characterization, risk assessment, feasibility study, and remedial response decision making. It is EPA's responsibility to assure the integrity and adequacy of site-data in support of a Record-of-Decision issued by EPA pursuant to CERCLA and the NCP. Data management for RP lead sites will be defined by several documents including, but not limited to: the Consent Decree, Administrative Settlement Agreement and Order on Consent, and the Contracted Statement of Work. Sampling and Analysis Plans (SAPs) that include elements of the Quality Assurance Project Plans (QAPPs) and Standard Operating Procedures (SOPs) will include the data requirements and guidance provided in this Data Management Plan. The RP and their contractor tasked with data management shall provide specific quality control and data management requirements for each project and submit data to EPA in a Scribe-ready format as defined by this Data Management Plan. Each

Contractor shall develop a Quality Management Plan (QMP) that contains the overall quality policies, data management procedures, criteria for areas of application, roles and responsibilities and authorities of the Contractor that is performing work on the project.

Data collected by the RP shall meet the minimum data requirements in this Data Management Plan and quality requirements of EPAs quality program as outlined at www.epa.gov/quality. Additionally see the "Overview of the EPA Quality System for Environmental Data and Technology" EPA/240/R-02/003 November 2002.

ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs". (American National Standard, January 5, 1995) Contractors Quality Management Plan (QMP).

Delivery Requirements
EPA will accept data delivered on CD, DVD, external hard drive, or as direct electronic submission via email or FTP site. Other delivery methods may be negotiated and allowed if methods listed present a significant burden or as technology changes to allow new processes.

Appendix A – Data Elements & Valid Values

Appendix A - Data
Elements & Valid Va

DRAFT

Appendix B – Scribe Templates

ESAT_INORGANIC_E
DD.xls

ESAT_ORGANIC_ED
D.xls

CLP_inorganic
universal EDD.xls

CLP_organic
universal EDD.xls

EDDBiotaSampling
Field Descriptions_R8

Additional Scribe templates can be found at www.epaosc.org/scribe

Appendix C – Additional Scribe EDDs

Importing Data into Scribe
Using
Scribe EDD Templates

Additional Electronic Data Deliverable (EDD) templates for Scribe are available to assist in the process of importing data into Scribe using Scribe's Custom Import feature available from the Scribe File Menu, Import, Custom Import. The EDD templates provided are boilerplate .csv files, for example EDDSoilSampling.csv, that contain Scribe field names in the first row of the file which make it easier to map field names and import data into Scribe. You can copy and use these EDD files to record data to be imported into Scribe. The Field Descriptions.xls files also specify Required Fields and fields that uniquely identify a record as a Primary Key (PK). Additional Scribe EDD templates can be found on the EPA OSC web site at www.epaosc.org/scribe

For assistance in importing data into Scribe, please contact ERT Support.

ERT Software Support
ERTSupport@epa.gov
(800) 999-6990

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Appendix D – Entity Relationship Diagram

Scribe Entity
Relationship Diagra

Appendix E – Data Review Process

The ESAT Data Review Process:

The first level is an analyst level review (ESAT ICP-OE Data Review Form.pdf) this is a method-specific review completed by the analyst who ran the test. This includes a cover sheet with all of the standard, batch and sequence IDs, followed by a data review form. Each analytical run for each test gets one of these. They have slight differences between the methods based on the NELAC requirements for each one, but the overall form and format is the same.

Next are the Level II, III, & IV forms (ESAT Data Package Completeness and Tracking Form). A breakdown of the steps is listed below:

Level II - Here the data package is compiled from all of the different analyses and analytical runs (groups of raw and final data, each with a completed level I review and reviewed for completeness). Level II takes place over the course of the entire process. The QA/QC part of the level II review (peer data review) happens on form (TLF-06.00).

Level III – The completed data package is reviewed, LIMs data verification takes place and a QA/QC report is generated and reviewed, as well as a case narrative.

Level IV – an overall data review is performed with an emphasis on completeness, TDF requirements, contractual obligations, etc. At this step, at least 10% of the data is reviewed back to the raw data and calculations are double checked.

Finally, the package returns to the Level II reviewer for digitalization and delivery to the client.
Level III and IV level reviews are confined to small group of senior personnel with more 10 years of experience.
A more detailed description may be found in the SOP, Document No: 16-DAT-01.00, effective 03/12/2014.

Other laboratories and contractors will have their own data review procedures that will be detailed the site-specific SAP and QAPP. Guidelines for data validation and review for Superfund use is attached below.

Transmittal Memo-
SF Data Validation (

EPA-540-R-08-005.p
df

CLP Data Review Process
The Analytical Services Branch (ASB) provides data assessment services to CLP customers through the Sample Management Office (SMO) contractor. SMO performs data assessment on laboratories'

hardcopy and electronic deliverables based on contractual and technical requirements outlined in the Statement of Work (SOW), Request for Proposal (RFP), and National Functional Guidelines (NFGs) for each analytical service.

Data assessment includes the following:

- **Completeness** - SMO ensures that all requested data are present and consistent (based on hardcopy and/or electronic reporting requirements)

- **Compliance** - SMO compares the analytical Quality Control (QC) results with the SOW, method, contract, and regional validation requirements or guidelines.

- **Recalculation Checks** - SMO confirms laboratory reported values (e.g., sample results) by recalculating them using the instrument output data reported by the laboratory in their Electronic Data Deliverable (EDD)

- **Instrument Output** - SMO reviews the actual instrument outputs to ensure that the laboratory reported analytes have been correctly identified and quantified.
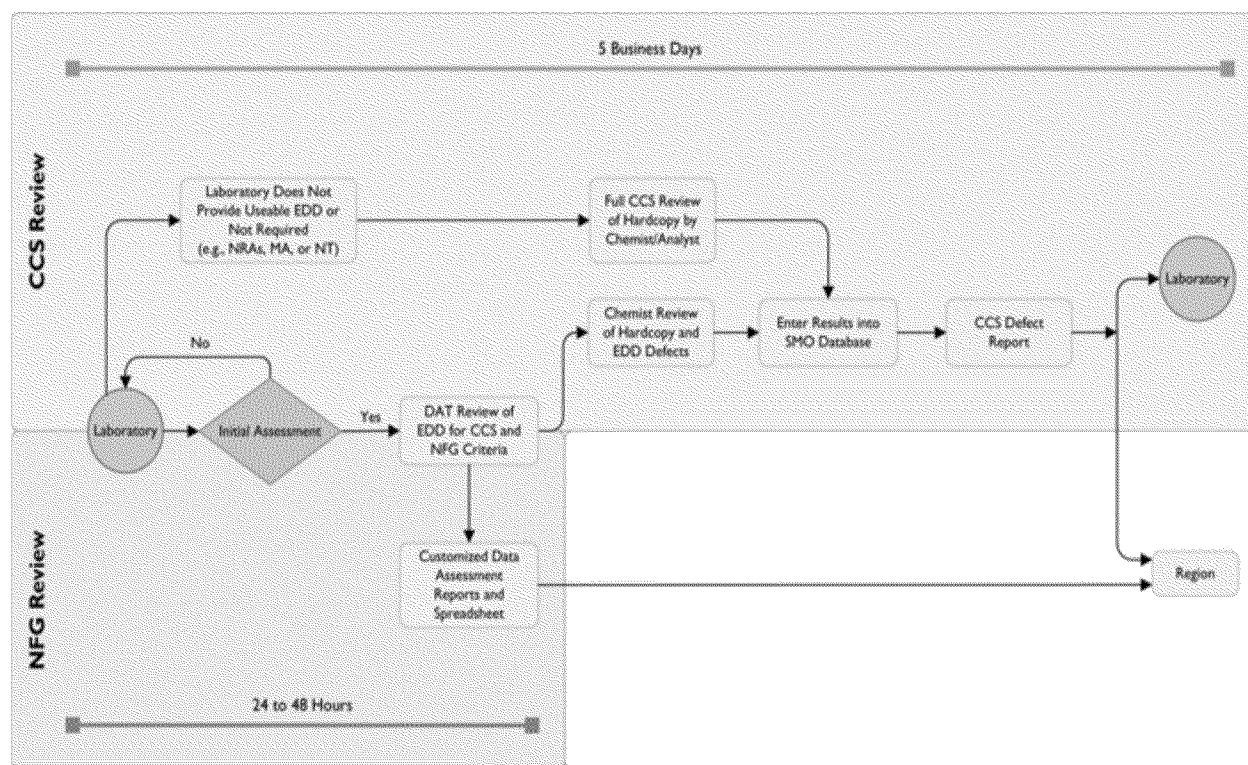
Data Assessment Process Overview

SMO provides various tools to facilitate the data assessment process.

Additional Guidance Documents for the Contract Laboratory Program (CLP) may be found on the CLP website http://www.epa.gov/superfund/programs/clp/guidance.htm

Appendix F – EPA Region 8 GIS Deliverable Guidance

Region8_GIS_Deliver
able_Guidance.pdf

Appendix G- Region 8 sites with data already in Scribe

The attachment contains all of the known sites that have data that has been published in the Scribe database as of July, 2015.

Appendix G_Sites
with data in Scribe_

Appendix H - Auditor Queries

Appendix H - R8DMP
Scribe Data Audit Rul

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Appendix I – Training Materials

All Scribe training, user guides and the Scribe software can be downloaded from the Scribe Development web site at:

https://www.epaosc.org/Scribe

Additional support can be found on the ERT Software Support web site at:

http://www.ertsupport.org

Appendix J – US Geological Survey Data Management Planning Considerations – Worksheet

This is a great resource when in the planning stages of data collection, from the US Geological Survey.

data-management-
checklist.pdf

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Appendix K – Region 8 Site Specific Data Management Plan Template

Appendix K -
Example Site-Specifi